



3RD SPACE EXPLORATION CONFERENCE & EXHIBIT

Gen Y and Space Exploration: A Desire for Interaction, Participation, and Empowerment

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Field Research: Things to Remember

- All surveys and polls represent “a snapshot in time” – things change
- This is descriptive data only
 - Gen Y sampling frames are NOT random
 - Cannot generalize from results
 - Data gathered over several years has some weight but still not definitive
- Like Maxine, researchers love categories because they are helpful...



...but they represent only one way of looking at reality.

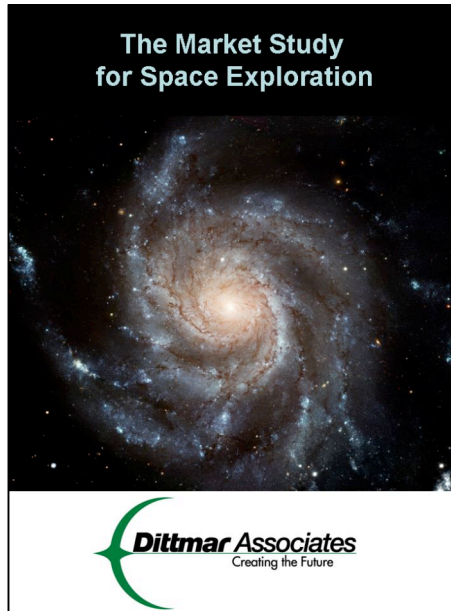
Preamble – and a Look Back



“Although support and interest remain strong, respondents also expressed discomfort with NASA that, surprisingly, seems to stem less from the challenges the agency has faced in its recent history and more from the perception that although the public supports the space program, the space program is disengaged from and uncaring about the public. The desire for a responsive NASA – one that goes out of its way to involve interested citizenry in real and meaningful ways beyond traditional ‘outreach and education’ – emerged repeatedly in responses to questions asking about relevance of the space program to their everyday lives. “

**- *The Market Study for Space Exploration, p. 33*
*Dittmar Associates, 2004***

Defining the Problem

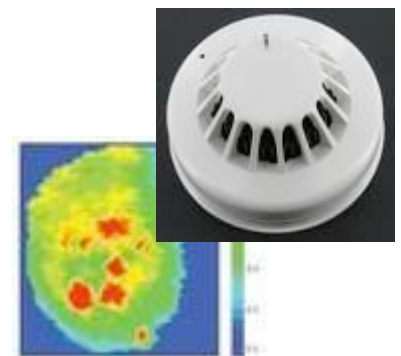


- Dittmar Associates “The Market Study for Space Exploration”, 2004
- Found substantial demographic differences in attitudes toward NASA and the VSE
 - Strong interest and endorsement among Caucasians, Asians, Males, people 45-65 years of age
 - Little interest and less endorsement among Women, Hispanics, and younger adults
 - “Relevance” was key variable in determining engagement
- Among 18-25 year olds, found very little excitement or interest about NASA or its activities (including VSE) – with the exception of Mars rovers
 - General confusion about and lack of interest in what NASA does
 - For most, NASA generally not relevant
 - Strong sense that NASA wasn’t about them
 - Other things of much greater concern (war, jobs, relationships)
 - But rovers were “cool”!!

Subsequent Studies



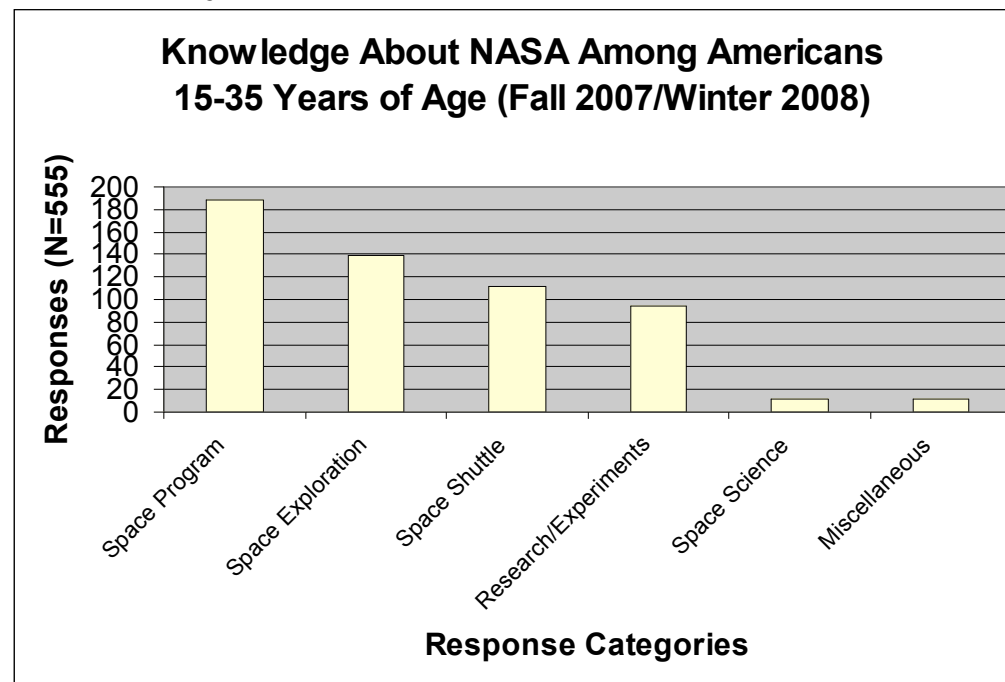
- Dittmar Associates, 2006, focus on “Gen Y”
- Supported results from the 2004 study
- Rovers still “cool”
- Emphasis on the absence of a relationship with NASA
 - No participation
 - No interactivity
- NASA largely irrelevant or of little interest to majority
- Dittmar Associates, 2007, with ViaNovo & The Everett Group
 - Relevance (or lack thereof) still a big factor in determining interest
 - Not enough of a sample to evaluate Gen Y
 - Strong favorable public response to learning about benefits of NASA’s work, particularly technologies such as smoke detectors and advanced breast cancer imaging



Late 2007/2008: NASA Knowledge Still Thin



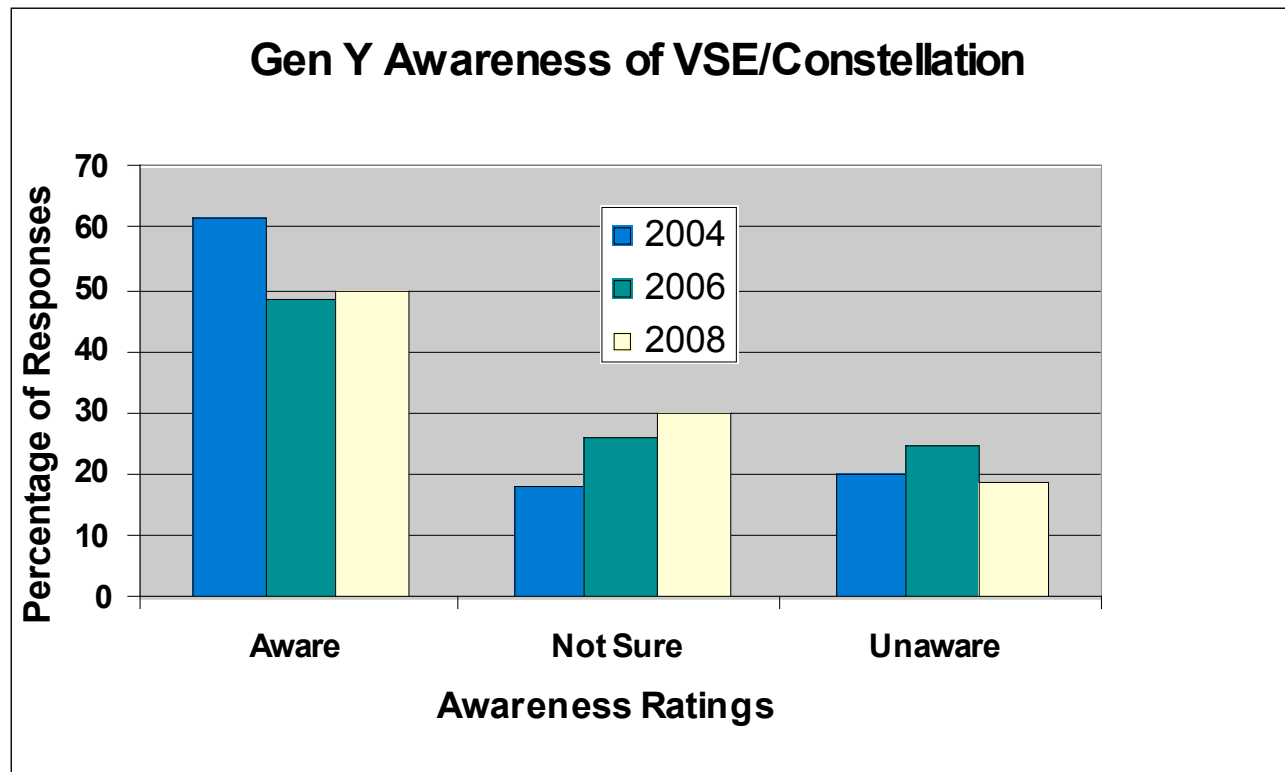
- Dittmar Associates 3rd Study on Gen Y: 2007/2008
- Web-based solicitation with phone call follow-ups
- Asked questions about relevance, interest, awareness relative to NASA and to the VSE/Constellation
- Respondents ranged from 15 to 35 years of age, N=555
- First question: “In your own words, please tell me about what NASA does”



Awareness of VSE/Constellation Around 50%



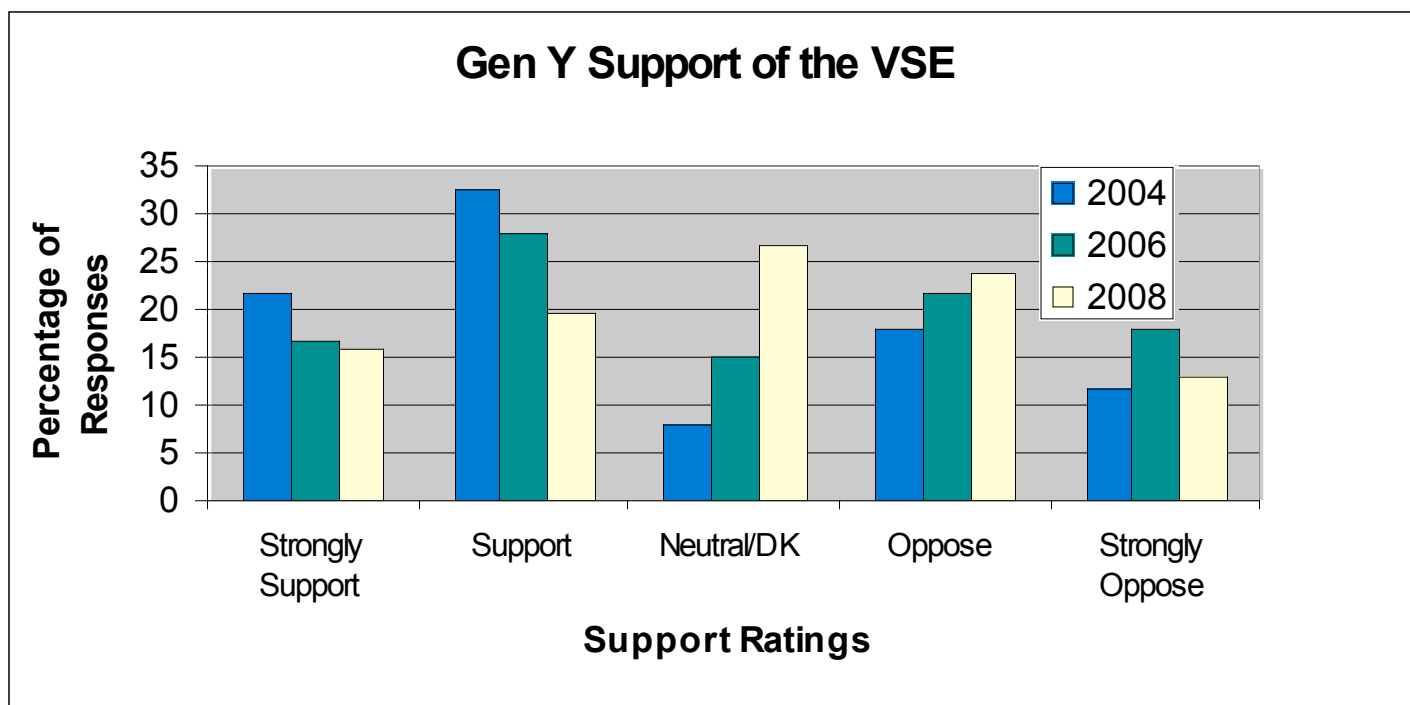
- “Are you aware of NASA’s plans to complete the International Space Station, send humans back to the Moon, and eventually send humans to Mars?” (18-25 only; N=367)



Support for VSE Decreasing, Uncertainty Increasing



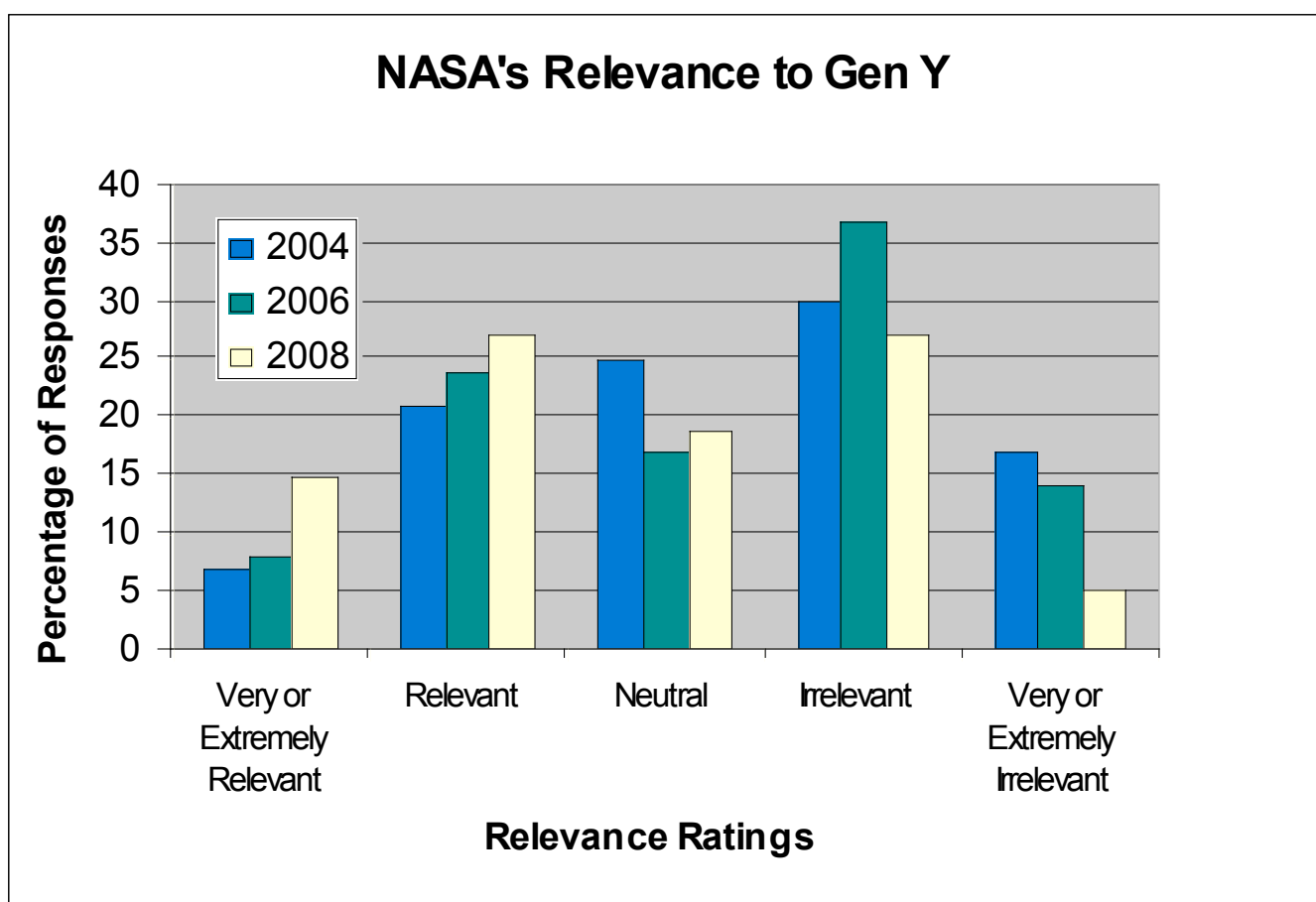
- “The Vision for Space Exploration calls for robotic missions to the Moon by 2008, a new crew vehicle by 2014, a human mission to the moon between 2015 and 2020, and then a mission to Mars sometime in the 2030 to 2040 time frame. What best describes your response to the plan?” (18-25 only; N=367)



NASA Relevance Still Low, But May Be Improving



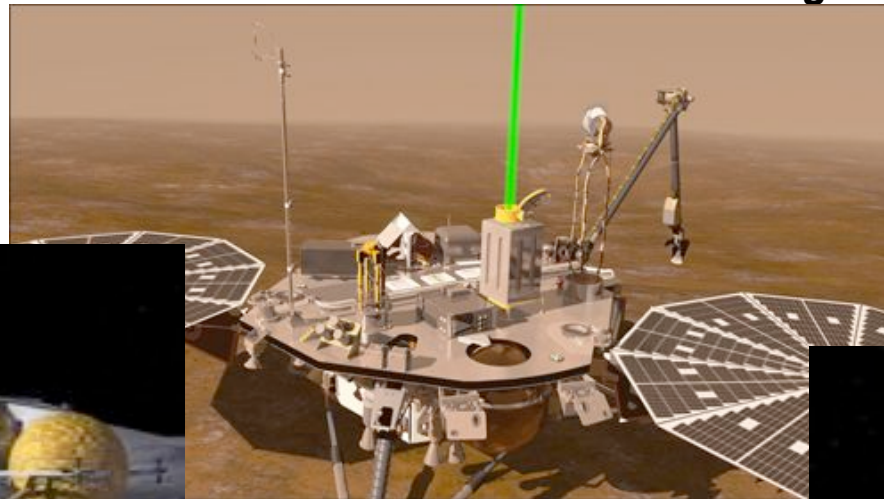
- “How relevant is NASA to you in your everyday life, and to the lives of your family and friends?” (18-25 only; N=367)



“The Desire for a Responsive NASA”



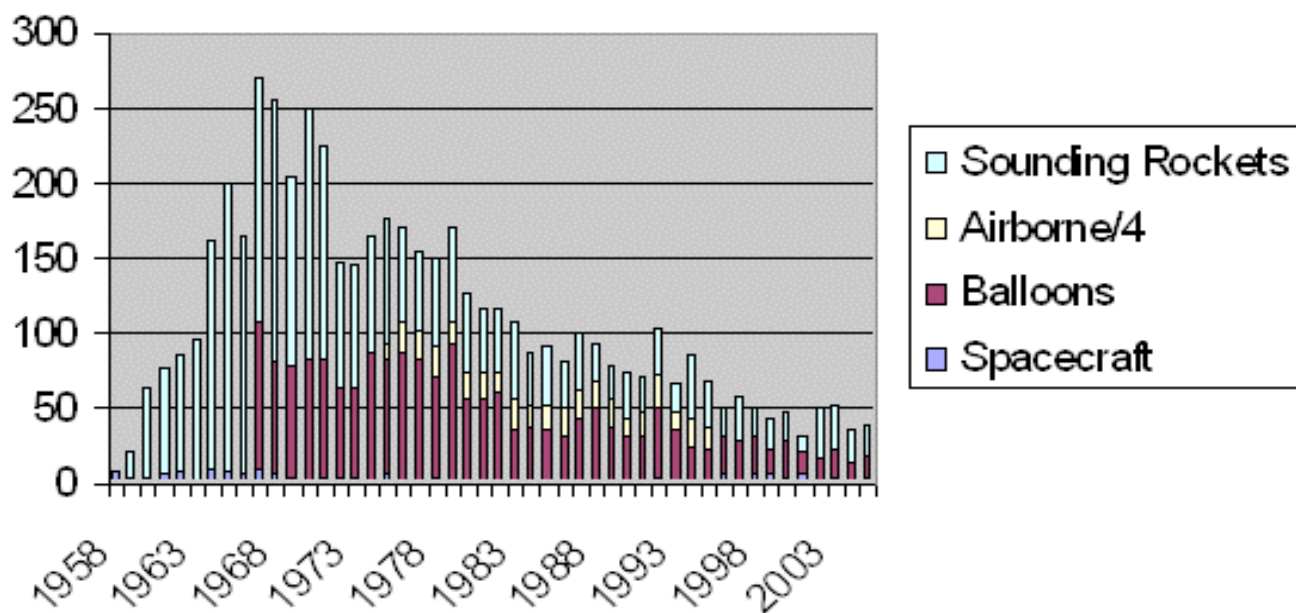
- “What would get you interested in and excited by NASA?” (ranked responses, all respondents)
 - *If I could go*
 - Another disaster
 - *Participation in the mission*
 - *The ability to see what robots and astronauts are seeing in real time*



Meanwhile...



Potential Opportunities for Hands-on Experience by Graduate Students in the Earth and Space Sciences



-courtesy David Black, USRA

Interaction, Participation, and Empowerment: Requirements for Mission Design



- “If you could design a robotic space exploration mission that had getting young people involved with and excited about NASA as one of its top goals, what would you want to see included?”
 - Multiplayer login
 - Multiple robots
 - Competition
 - Download what’s going on to our (cell) phones
 - Ability to reconfigure robots to meet challenges
 - Team-decision making about commanding (teams are networked)
 - Mission should have a strategic component – mission goals vs. resources
 - Have to figure out how to choose who can be involved. Some *(&^^%*)%#!! would get in there just to screw things up
 - Be able to see what the rover sees
 - Be able to get downloads and telemetry in real time
 - It’s like the Internet; if they put the rovers there we will figure out how to use them

Mission Design, continued

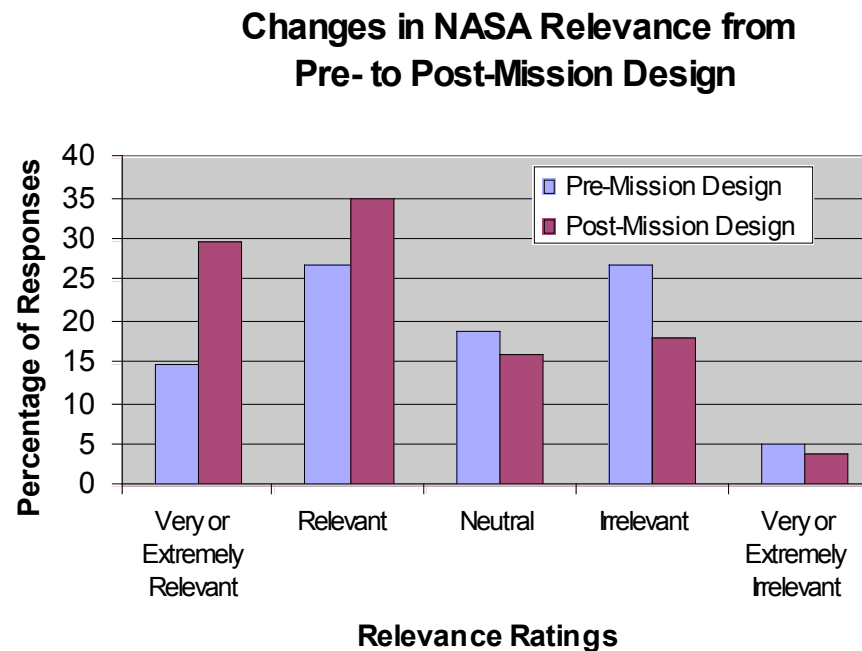


- Import robot views into a game in real time, so we can use robotic inputs in a bigger “virtual space”
- Virtual control centers with avatars (like Second Life)
- Use Second Life to design robots and plan mission
- Robot activities – we can use robots to build things
- Collaborative planning of robot activities and raids (like World of Warcraft)
- Global collaboration
- Bring my friends in and we can figure out what to do with robots together
- Put robots on the Moon and on Mars and be able to use all of them
- Use the robots to build robots
- Put robots into the schools (commanding, projects)
- If we can learn how to do this on the internet we can do it in real life so start with virtual robots and virtual Mars
- Have no idea
- Don't like robots
- Don't care about space

Interaction, Participation, and Empowerment = RELEVANCE



- “If these sorts of capabilities – the ability to interact directly with missions, whether robots or astronauts or satellites - were made available by NASA, how relevant would NASA be to you and your friends?”



Reasons why?



- Could go to the Moon any time
 - We are going to the Moon, not watching someone else go to the Moon on CNN
- Makes NASA a part of my life
 - NASA would be on my computer
- Way to meet people who want to do something important
 - Would meet engineers and scientists who would get involved
 - Meet other people with similar interests and build new things
- We might actually come up with some new things that could help exploration, with all of these people contributing
 - Lets me contribute
- Beats the hell out of WoW (World of Warcraft) because this is real
- Not have to go through 10 years of college to do it
- It could be like “NASA Life” (rather than Second Life) – it would be going on all the time and I could log on to see what has happened and get with my team to work some more on it

“So, What Am I Supposed to Do With THIS?!”



- Don't look for reasons to say “No”
- Consider a different way of doing things
- Question what is possible; re-imagine a mission with additional capabilities
 - More bandwidth
 - Simultaneous runtime environment with multiplayer simulation
 - Import camera views
 - Recruit public “collaborators” to help development
- Evaluate suggestions such as these in light of the usual decision trees:
 - Feasibility/Realism
 - Technical maturity
 - Cost
 - Schedule
 - Performance
 - Budget
- Consider the feasible suggestions in terms of their VALUE –
 - What would have to be invested?
 - What might be the return on that investment?
- ***May be more than we can imagine***

What's Next??



Gen Y, on --

Inspiration...

Innovation...

Discovery...

The Future